Having described the invention, the following is claimed:

1. An apparatus for information extraction from electromagnetic energy via multi-characteristic spatial geometry processing, said apparatus comprising:

means for receiving electromagnetic energy from a source, the received electromagnetic energy having a plurality of spatial phase characteristics;

means for separating the plurality of spatial phase characteristics of the received electromagnetic energy;

means for identifying spatially segregated portions of each spatial phase characteristic, with each spatially segregated portion of each spatial phase characteristic corresponding to a spatially segregated portion of each of the other spatial phase characteristics in a group; and

means for quantifying each segregated portion to provide a spatial phase metric of each segregated portion for providing a data map of the spatial phase metric of each separated spatial phase characteristic.

2. An apparatus as set forth in claim 1, wherein said apparatus is an imaging apparatus for providing an image of an object as the source, and includes means for determining an imaging value associated with each group of corresponding segregated portions using the spatial phase metrics, and means for assembling an image of the object using the determined imaging values.

3. An apparatus as set forth in claim 1, wherein the spatial phase characteristics of the electromagnetic energy include polarization characteristics of the electromagnetic energy.

4. An apparatus as set forth in claim 1, wherein said means for providing a data map includes providing the map to indicate spatial phase change.

5. An apparatus as set forth in claim 1, wherein said means for quantifying each segregated portion to provide a spatial phase metric includes associating an information value with each segregated portion.

6. An apparatus as set forth in claim 1, wherein the electromagnetic energy conveying insufficient characterization in the visible and infrared spectrums to permit viable intensity-based and/or frequency-based usage.

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7. An apparatus as set forth in claim 1, wherein said apparatus is a single view imaging apparatus for providing an image of an object as the source, and includes means for determining an imaging value associated with each group of corresponding segregated portions using the spatial phase metrics, and means for assembling a three dimensional image representation of the object using the determined imaging values.

8. An apparatus as set forth in claim 7, wherein said means for assembling a three dimensional image representation includes means for using determined values representative of slope functions of the object.

9. An apparatus as set forth in claim 7, wherein said means for assembling a three dimensional image representation includes means for using determined values representative of surface shapes of the object.

10. An apparatus as set forth in claim 7, wherein said means for assembling a three dimensional image representation includes means for using determined values representative of surface contour of the object.

11. An apparatus as set forth in claim 1, wherein said apparatus is an imaging apparatus for providing an image of an object as the source, and includes means for determining an imaging value associated with each group of corresponding segregated portions using the spatial phase metrics and indicative of material composition of the object associated with each group of corresponding segregated portions, and means for assembling an image representation of the object indicative of material composition using the determined imaging values.

12. An apparatus as set forth in claim 1, wherein said apparatus is an imaging apparatus for providing an image of an object obscured by an electromagnetic energy scattering media that permits a minimal amount of electromagnetic energy passage and includes means for determining imaging values from the minimal amount of electromagnetic energy.

13. An apparatus as set forth in claim 1, wherein said apparatus is a communication apparatus and said means for quantifying each segregated portion to provide a spatial phase metric includes determining a information value from each segregated portion.

14. An imaging apparatus comprising:

means for receiving electromagnetic energy proceeding from an object; and

means for creating an image of the object utilizing only spatial phase characteristics of the electromagnetic energy proceeding from the object.

15. An apparatus as set forth in claim 14, wherein said means for receiving and said means for creating include components that do not move relative to each other.

16. An apparatus as set forth in claim 13, wherein the spatial phase characteristics of the electromagnetic energy include polarization characteristics of the electromagnetic energy.

17. An imaging apparatus comprising:

means for receiving electromagnetic energy proceeding from an object, the electromagnetic energy conveying insufficient characterization in the visible and infrared spectrums to permit viable intensity-based and/or frequency-based image creation; and

means for creating an image of the object utilizing spatial phase characteristics of the electromagnetic energy proceeding from the object.

18. An imaging apparatus comprising:

means for receiving electromagnetic energy from an object, the received electromagnetic energy having a plurality of polarization characteristics;

means for separating the plurality of polarization characteristics of the received electromagnetic energy;

means for creating a plurality of images, each image being created using one of the separated polarization characteristics, each image having a plurality of pixels, with each pixel of each image corresponding to a pixel of each of the other images in a group;

means for quantifying a polarization metric value at each pixel of each created image;

means for determining an imaging value associated with each group of pixels using the quantified values; and

means for assembling an image using the determined imaging values.

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19. A method for information extraction from electromagnetic energy via multi-characteristic spatial geometry processing, said apparatus comprising:

receiving electromagnetic energy from a source, the received electromagnetic energy having a plurality of spatial phase characteristics;

separating the plurality of spatial phase characteristics of the received electromagnetic energy;

identifying spatially segregating portions of each spatial phase characteristic, with each spatially segregated portion of each spatial phase characteristic corresponding to a spatially segregated portion of each of the other spatial phase characteristics in a group; and

quantifying each segregated portion to provide a spatial phase metric of each segregated

portion for providing a data map of the spatial phase metric of each separated spatial phase characteristic.

20. A method as set forth in claim 19, including processing the spatial phase metrics to derive information.

21. A method as set forth in claim 19, wherein said step of separating includes discerning a three-dimensional shape aspect of the ellipsoidal shape of the electromagnetic energy.

22. A method as set forth in claim 19, wherein an image of an object is provided, an imaging value is determined for each group of corresponding segregated portions using the spatial phase metrics, and the image is assembled using the determined imaging values.

23. A method as set forth in claim 19, wherein the spatial phase characteristics of the electromagnetic energy include polarization characteristics of the electromagnetic energy.

24. A method as set forth in claim 19, wherein said step of providing a data map includes providing the map to indicate spatial phase change.

25. A method as set forth in claim 19, wherein said step of quantifying each segregated portion to provide a spatial phase metric includes associating an information value with each segregated portion.

26. A method as set forth in claim 19, wherein said method is for communication and said step of quantifying each segregated portion to provide a spatial phase metric includes determining a information value from each segregated portion.

27. A method as set forth in claim 19, including processing all spatial phase metrics to derive information.

28. A method of creating an image, said method comprising:

receiving electromagnetic energy proceeding from an object; and

creating an image of the object utilizing only spatial phase characteristics of the electromagnetic energy proceeding from the object.